

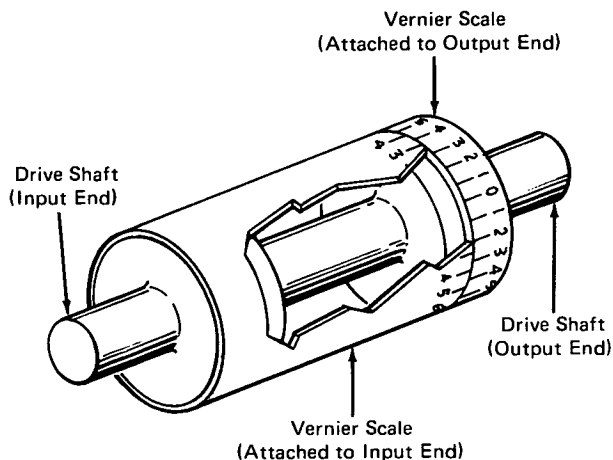
# NASA TECH BRIEF

## *Manned Spacecraft Center*



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### Noncontact Torque Measurement Using Stroboscopic Techniques



A noncontact torquemeter using stroboscopic light has been developed. The torsional deflection of a rotating shaft is measured and the results are viewed on a vernier scale. The magnitude of the torque must be calculated from this deflection.

One method of measuring the torque in rotating machinery utilizes strain gages that are attached to the rotating shaft. These sensors are connected to slip rings, where contact is made through brushes that sense electrical signals. These signals are proportional to the torque measurement.

The noncontact torquemeter, as shown in the figure, consists of a vernier attached to the shaft. As the shaft

rotates, the scales move relative to one another and the resulting displacement determines the shaft torque. A strobe light, flashing at a frequency proportional to the rotation of the shaft, is used to freeze the rotation. This allows instantaneous vernier readings.

This device has no electric connections with the rotating member and is easy to use. It should be of use in quality control tests, and by maintenance personnel engaged in the manufacture and repair of electrical motors and internal combustion engines.

#### Note:

Requests for further information may be directed to:  
Technology Utilization Officer  
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#### Patent status:

No patent action is contemplated by NASA.

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